LOUISIANA conservationist

march — april, 1970

Clark M. Hoffpauer, Director

□ □ □ □ □ comments □ □ □

. . . Ill habits gather by unseen degrees—As brooks make rivers, rivers run to seas . . .
Ovid

On February 24, the Louisiana Wild Life and Fisheries Commission adopted an important resolution. It formally urged and requested the Louisiana legislature to enact legislation this spring to establish a stream preservation system that would halt the needless destruction of some of the state's few remaining natural rivers and streams.

The Commission specifically recommended that 41 streams, bayous and rivers in the states be preserved in whole or part in their natural or scenic state. These waterways possess unique and outstanding scenic, fish, wildlife, geographical, botanical, recreational, historical, archaelogical and cultural values for present and future citizens of the state of Louisiana, and visitors from all other states and foreign countries.

A stream preservation Act would deter the policy of channelization, channel realignment, clearing and snagging, indiscriminate reservoir construction and the encroachment of urban, commercial and industrial developments.

At the same meeting, the Commission opposed the proposed channelization of Bayou Cocodrie in Concordia Parish, on the Red River Wildlife Management Area, between the junction of Little Cross Bayou and Cocodrie Bayou south to the junction of Wild Cow Bayou. The Commission's opposition was primarily taken to leave Cocodrie Bayou in its natural condition.

Bayou Cocodrie is mentioned only in passing. Some 41 streams have been singled out for protection by such an act as envisioned by the Commission. Already hundreds of small streams and many larger ones have been turned into straight, muddy ditches, void of bank growth and serving no purpose other than to expedite the flow of water from the interior of the state to coastal lakes, bays and ultimately the Gulf of Mexico.

An act by the Louisiana legislature, aimed at stream preservation, would serve to stay the headlong rush to destroy the remainder of Louisiana streams which today retain some semblance of their former natural scenic and environmental values.

In urging and requesting legislative action, by means of an act, it is felt by the Commission that such an act would immediately serve as a deterrent to future manipulation of Louisiana streams. It is certain that this act would have popular support from Louisiana's citizenry who are expressing great alarm at the rapid disappearance of once picturesque rivers and streams.

It is inconceivable to this Commission that in the first year of the decade that will find the United States and all mankind frantically working to right the wrongs of a defiled environment that any agencies of the federal government can continue to pursue courses of action that have contributed to the defaced environment in which we now live.

Man cannot restore a stream to its natural state. The meandering creek or stream, flowing cleanly through a cathedral of shadow-casting trees, serves both fish life and other forms of wildlife. It has etched itself into the landscape through centuries. When it is gone, it is lost forever.

What is true of the smallest creek or stream is even more true of larger streams and rivers. If man's engineering skill cannot restore even the smallest stream, what possible recourse could the future ever hold for the larger streams and rivers?

Unless action is taken immediately, the streams of Louisiana will become only memories and live only in photographs of the past. Unless positive action is undertaken by the Louisiana legislature, Louisiana's remaining scenic streams will be destroyed. The state of Louisiana is on the verge of becoming devoid of streams and marked topographically by linked, straight, dirty and unsightly ditches—large and small.

There has to be a barrier between what is done for man under the guise of flood protection and drainage, and what is done against man's best environmental interests. A publicly supported act by the Louisiana legislature can be that barrier.

LOUISIANA conservationist

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I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters and wildlife.

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BASS takes over Toledo Bend

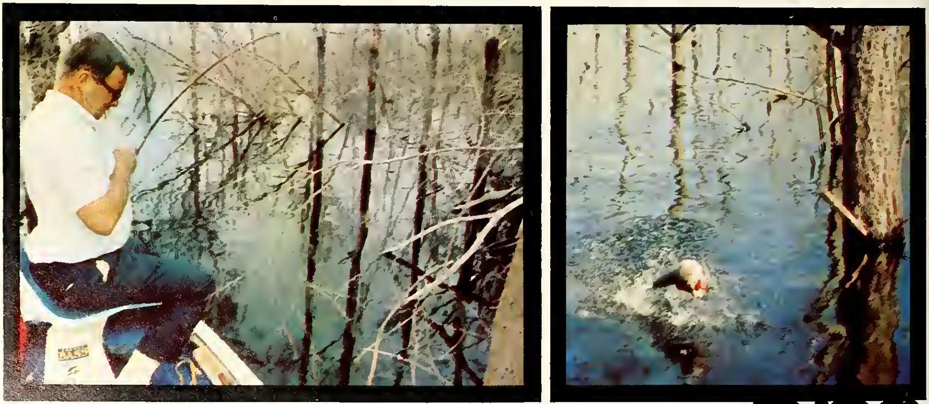
BY BOB DENNIE

I didn't make a typographical error. This BASS stands for the Bass Anglers Sportsman Society whose entire membership (at this writing they number about 10,000) are completely devoted to the pursuit of this finned fighter that has sent many a man mumbling on his way. • Seventy-nine of the country's top bass fishermen, gathered from 15 states, hit Toledo Bend's waters to test their competitive angling skills and to see if what they had heard about the sprawling 184,000 acre lake that straddles the Louisiana-Texas border, was really true. • They got their answer in the form of 1,791 bass! Yes, this 20 month old lake produced 2,715 pounds and 8 ounces of bass during the three-day tournament. All fish were cleaned and donated to charitable organizations in the area. • According to Ray Scott of Montgomery, Alabama, presi-

1. Depth finders will enable you to read the bottom and double your chances for success. 2. From early summer through fall the plastic worm is tops for bass. 3. Mike Bono, Lake Charles, Toledo Bend bass champion.

Opposite page: Some ares of thick flooded timber were tough to fish but well worth the trouble.

dent of BASS, "This is the greatest production we have ever had out of a lake this young. Any lake that can produce over a ton of largemouth bass in the middle of winter just has to be on the super side come spring." • Winner of the tournament and now the official Toledo Bend champion was Mike Bono of Lake Charles, who weighed-in 94 pounds and 4 ounces; Roland Martin, a fishing guide on Santee Cooper Lake in South Carolina, was runner-up with 77 pounds and 6 ounces. • Gerald Blanchard of Memphis, Tennessee, placed third and had the tournament's top bass and proved that this isn't just a lake full of "foolish-keeper sized" fish. His lunker weighed 7 pounds and 15 ounces. • But before you grab your rod, tackle box and your road map there are a few things you should consider first, not that I want to discourage you. As a matter of fact, I want to prepare you a little better and increase your chances for success. • Bass are not the only fish that fishermen come to Toledo Bend for; there have been fantastic bream, crappie (Sac-a-lait to those of us that come from south Louisiana), and hopefully the striped bass and walleye project will become a successful reality. • Fishing for pan fish will vary very little here from most places. Baits will be the same worms, shiners, crickets, etc. But you will have to be prepared to go deep if you have to, so this might eliminate that cane pole. Usually a light action spinning rod with some 6-8 pound monofilament will do the trick. The depth that will be most productive will depend upon the time of the year and weather conditions. Marina operators are usually an excellent source of information, so ask them. They will be glad to help you. They want you to catch fish. • Bass fishing will probably call for changes in tactics and equipment. • I would venture a guess that a large segment of the bass fishermen in Louisiana have not fished in waters over 8-10 feet deep. And herein lies the problem that most visitors are faced with. • There is plenty of water at Toledo Bend and it is very deep. Often the bass are in this deep open water. This leads to the most important piece of equipment you can have on your boat in this type of water—a depth finder. With this handy item you can get a fairly accurate mental picture of the type of bottom you are fishing plus an accurate reading on the depth. You will be able to "read the bottom" and locate the old creek beds, roads and ridges which are often quite productive. • Knowing the depth is very important as bass usually go deep in winter in search of warm water and conversely go deep again in hot summer seeking cool water. • If you can determine just how deep the bass are then you can almost double your chances of filling your stringer. Spring usually finds the bass moving into fairly shallow water along the shoreline and back into some of the coves. It is during March and April that they will strike some topwater and shallow to medium depth baits, such as the Jointed Vamps, Devil's Horse, Jointed Reb II, Redfin and similar baits. Then June on through the summer and on into October the plastic worm is king. • But here again most people will have to make adjustments in their techniques. The best size has been one that is about 7-1/4 inches with a single hook that is threaded through the head and then back into the body of the worm to make it weedless. Also you must add a sliding bullet-shaped 3/8 or 5/8 ounce sinker to get it down to the right depth. • The most success that I have had with the worm has been to fish in the flooded standing timber in about 15-17 feet of water. We dropped the worm as close as possible to the thickest spot you could find, let it hit bottom, and jigged it straight up and down about a foot. But you had better be ready to set the hook fast and reel even faster or you end up on the short end of a submerged limb and then lose your fish. • A fairly stiff rod is needed to set the hook when worm fishing and plenty of 15-20 pound test mono on a good bait casting reel. This heavy equipment is a must in the thick underbrush that you must fish in to locate good bass. • In early summer the bass tend to be in water from 12-20 feet with 15 feet being a good average. • Always watch for schooling shad because the odds are that the bass are very close by and will often make their presence known for quite a distance when they start to feed. Seagull,



Be ready to set the hook fast and to reel even faster.

egrets and herons are also telltale signs that the bass are hitting shad, as they feed on the dead ones that float to the top. • If you see the bass feeding on shad try such baits as the silver or white Hot Spot, Little George, Cordell spoon and similar medium to deep running baits that imitate the shad. • As fall and winter arrive and the fish go a little deeper you might try medium weight spoons alone or with a 3 or 4 inch piece of black pork rind or the deadly Jig'n Eel with a 3/8 or 5/8 ounce head. • Most of the marinas in the area have boats and motors to rent, but you should call ahead to make sure. They rent the V type hull, as the jon or flatboat we use in the southern part of the state is not stable enough nor are the sides high enough to venture far from shore in case of sudden high winds. • Another item that will make your trip more enjoyable is an electric trolling motor which will enable you to move about much easier. It is also a great deal quieter than a paddle. • I have not attempted to set down any hard and fast rules for fishing Toledo Bend but merely to give a better picture of the techniques and equipment that I have had success with. • Naturally, the best thing to do is to hire a competent guide. He will be well worth his fee in the time that you can save and the techniques you can pick up from him. He will be trying all the tricks he knows to help you catch fish because his livelihood depends upon it. • Be extremely watchful of the weather and if it begins to look threatening, return to shore as soon as possible. High winds can be very bad on any body of water this size. • Recently the Louisiana Wild Life and Fisheries Commission along with its Texas counterpart set the daily limit on bass at 15, but with no possession limit; no daily creel or possession limits on catfish, crappie, sunfish or other species taken by sports fishing methods. • Fishery technicians have termed these creel limits biologically sound and the uniformity of the regulations will allow fishermen from both states to fish in any waters included in the vast impoundment.

Specially designed bass boats fully equipped with depth finder, electric trolling motors, live bait wells and even gunwale to gunwale carpeting have made fishing even more fun.

Bill Dance, Memphis, Tennessee, the nation's top bass fisherman, shows why Toledo is tops.

BOBWHITE QUAIL

By CHARLES R. SHAW

Colinus virginianus—The bobwhite, so named for the familiar spring call of "bob bob white", is a well-known bird throughout most areas of Louisiana except for the coastal marshes and it even invades these sometimes along the spoil banks of the ever increasing larger canals such as the Intercoastal Waterway.

It is also known sometimes simply as "quail" or "partridge" although these terms denote entirely different birds to the professional ornithologist, and many bird-watchers.

This is a small (for a game species), short-tailed, chunky reddish brown bird, not quite as large as a small bantam hen. The male can be distinguished by some blackish featheration in the head along with a wide contrasting white stripe extending backwards above the eye and a white throat patch. In the female this white is replaced by a yellowish buffy coloration.

The bobwhite easily wins the nomination for the number one upland game bird, particularly in the southern part of the country where bird hunting and the related field dog trials may have reached the popularity and social standing of fox hunting in England. Quail populations have always fluctuated greatly but perhaps 10 or 15 million of these popular and tasty game birds are harvested annually in the United States. This does not greatly affect future populations which are controlled largely by availability of suitable habitat.

This is one wild creature which profited from civilization and after the inroads of the early settlers on the forest lands and the advent of small scattered farms throughout the country the population of bobwhite quail increased enormously. The clear, cut and get out tactics of the early logging operations in the South gave another big boost to the quail population as a great many very important annual and perennial food plants moved in when all the trees were cut. The bobwhite declined in numbers with the new mechanized clean farming operations and improved pasture land, to say nothing of the effect of powerful chemicals spread over vast areas of cropland.

These birds need feeding areas, nesting cover and escape cover located in close proximity. Food and cover are needed every day of the year and slight seasonal changes of range may be necessary but the birds seldom range more than a mile or so from where they were hatched.

The bobwhite is a ground nesting bird and conceals its nest in cover usually close to more open areas. The nests are generally well covered over and will contain from 10 to 20 pure white eggs although about 14 seems to be the average number in a clutch. The male bird shares the incubation duties to a certain extent although the female carries the main responsibility. If, however, something happens to his mate the cock bird will assume full incubation duties and also care for the young when they hatch.

The newly hatched quail are quite precocious, resembling small banty chicks. They follow the parents, leaving the nest the same day they are hatched, actually within a short time after the last little fellow has freed himself from the egg shell. Both parents are very industrious in looking after them and the young birds soon learn to scratch for themselves. The wing feathers grow rapidly and it is not too long before the young birds are able to fly short distances. In the meantime their protective coloration makes them very hard to find once the group has scattered and concealed themselves from a real or fancied enemy.

The large number of eggs produced indicate nature's provision for a high natural mortality which reduces the annual population whether or not any birds are taken by the hunter. If 14 young grow to maturity plus the two parents this makes sixteen birds or a 700 percent increase, in fact if only four birds out of each brood survive until the spring breeding season this represents a 100 percent increase. Habitat limitations will not allow this type of increase to continue for very long. It is evident, therefore, that a reasonable harvest can be made of each covey without endangering its continued existence. It is well known that birds have occupied the same covey ranges for year after year, furnishing excellent sport throughout the entire time. If man does not take his share first, nature will eliminate the excess anyway. Disease, malnutrition, parasites, traffic fatalities, predators, severe weather conditions such as droughts, floods, ice storms, etc., as well as ants, rats and other natural predators take their toll each year. However we must not overlook the free-ranging dogs and night-hunting cats which in some areas may well take a heavier toll than the forces of nature.

CRAWFISH
Gourmet's Delight

BY LYN JOHNSON

"Call them what you will: Crawfish, crayfish, crawdads, Dixie Lobster or mudbug. A crawfish by any other name is still one of the tastiest morsels on any menu."

Continued

Whichever way you like them cooked, much of the fun in eating the delicious crustaceans is catching them yourself, at practically no cost. Crawfishing is great sport; all you need are a dozen nets, time and transportation to a productive spot.

Perhaps the greatest enjoyment in the sport comes when the outing becomes a family picnic. Persons of all ages can participate and have a grand time in the sunny outdoors.

A dozen crawfish nets will fill the bill for a family out for mudbugs in the swampy and shallow country of Louisiana. The standard nets are sections of cord-woven mesh with the mesh measuring about half an inch. The squares are joined at each end by inverted "V" sections of wire, about the thickness of a coat hangar. A loop joins the tops of the inverted "V"s. Most crawfishermen tie colorful strips of cloth to the loops to spot the nets easily when submerged in about a foot of water. One of the best baits to use is called "melts" which is tied to the bottom of the net. A pole, about 10 feet long, is used to place and retrieve the nets and to stir up the waterbottom area to attract the crawfish. Nets should be moved frequently to catch all the mudbugs in the area.

Some do-it-yourselfers make their own nets. Two-feet square sections of half-inch wire cloth are cut with tin shears and the edges are folded up about two inches. Coat hangers are used for the supporting inverted "V"s.

Louisiana's little lobsters can be found in puddles, roadside ditches, ponds, rice fields, running streams, and sometimes in large lakes.

While the recreational value of crawfishing is extremely high, many persons have turned to the commercial aspects. One of the most productive areas is the Atchafalaya Basin where crawfish trappers run chicken wire crawfish cages and lift nets.

The commercial crawfish pots are fashioned into the rectangular shape with mesh wire. At one end is a funnel shaped door through which the crawfish ente when they are attracted to the bait, meal pressed into small cakes. This type of fishing for the mudbug works best in six to seven feet of water with a flow to the water. Some of the most productive places are in the Belle River and Bayou Pigeon in the Atchafalay country. Crawfishing in standing water such as ric fields is done with nets.

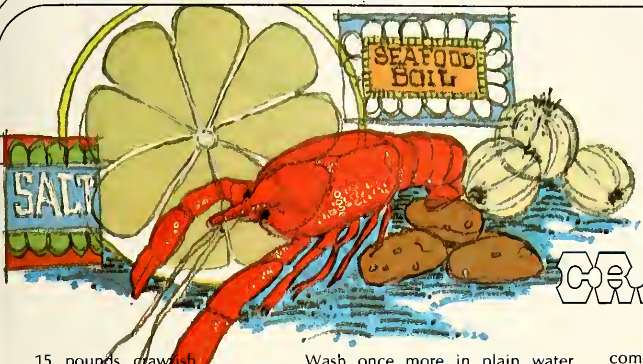
To supplement the wild, natural resource of the red swamp crawfish, farm management has come into its own throughout Louisiana. Since 1959 the amount of land used for crawfish farming has increased to about 12,000 acres.

The most rapid increase in acreage developed nea Pecan Island, in slightly brackish marshland. Research conducted by the Louisiana Wild Life and Fisheries Commission on the tolerance of crawfish to salt wate shows that thousands of brackish marshland acres are suitable for crawfish farming. The commission's crawfish project, headed by Cecil LaCaze, fishery biologist, provides assistance for crawfish ponds, wate management, fish control, vegetation, pesticide effects and the expanding available markets.

LaCaze reported that a systematic sampling program was initiated on one typical crawfish pond: "The most significant finding in this study verified that harvesting of crawfish in November and December is a sound practice. Many adult crawfish not harvested during this period will reach the end of their life spans and die before the normal spring harvesting season."

Although the commercial aspects of crawfishing are booming, as a sport to be enjoyed by the entire family it remains near the top of the list for Louisianians There are few things which are rated higher for the Louisiana gourmet than boiled crawfish delicately peeled and popped into the mouth or the world-famous dishes of crawfish bisque and crawfish etouffe.

Crawfish are not unique to Louisiana. There are more



RECIPE FOR BOILED CRAWFISH

- 15 pounds crawfish
- 6 lemons
- 4 onions (preferably red)
- salt (rock or fine)
- Cayenne pepper
- 3 heads of garlic
- liquid or dry seafood boil

First wash in large tub of water making sure to remove all twigs, dead crawfish or vegetation that may be mixed in with your catch (this problem doesn't usually exist with crawfish that are taken in deep water traps but with crawfish that are taken in the swamps with the conventional nets). Then purge the crawfish by placing them in a strong salt water solution for about five minutes.

Wash once more in plain water making sure that the water appears clear.

Fill a large pot with enough water to cover the crawfish after all the seasonings have been added. Then add enough salt so that the water is well salted; usually for 15 pounds this will require about 1 to 1-1/2 boxes depending on your personal taste— then add cayenne pepper to your taste. Add the cut lemons, onions and garlic along with the commercial seafood boil according to their instructions.

Let this come to good boil (this will come to a boil much quicker if the pot is covered). After it comes to a good boil place the crawfish in and let it come to a second boil and boil for about 3-5 minutes depending on the size of the crawfish (longer for the larger ones). Turn off the fire and let them soak of about 20-30 minutes (at least 20 minutes) then remove a few test crawfish to sample. If the seasoning is insufficient you may have to let them soak a little longer.

An added treat can be experienced by adding potatoes (especially the small "new" ones) to the water along with the seasoning. This will also be an equalizer between the fast and the slow eaters.

Jerry Boquet

than 300 species worldwide, over 100 species in the United States, and 29 known species in Louisiana. Possibilities for commercial crawfish farming exist in neighboring states, but there has been little exploitation of this valuable resource. It could be a substantial by-product of rice farming in certain areas, but isn't.

In Louisiana, where the springtime frenzy about crawfish is accepted as part of a way of life, crawfish are not neglected. It may come as a surprise to Louisianians that in some sections of Hawaii, Austrailia and Japan the crawfish is regarded as a crop pest. In 1930, Louisiana's own prized red swamp crawfish was exported to Japan for use as food for bullfrogs which that country ironically exports in great numbers to the United States.

Still on the ironic side, those Japanese bullfrogs came from the State of Louisiana in 1918 and formed the brood stock for Japan's present commercial production.

About 1951, Dr. Matsuzo Veno, who was largely responsible for the introduction of the crawfish to Japan, reported that they were established in the vicinity of Osaka to the tune of 2600 pounds per acre and were causing serious damage by eating young rice shoots.

Louisianians, elbow deep in boiled crawfish, would only raise their eyebrows at something like this, wishing they were there with the nets to help the Japanese solve their problem.

In Europe, it is a different story. Crawfish are considered a delicacy. The problem there is that the supply can't meet the demand. In some countries there are daily creel limits on the number of crawfish that can be taken by an individual. A dozen crawfish tails in a salad is considered a treat.

It stands to reason that commercial crawfish farming will be intensified in the years ahead and that increased demands for Louisiana crawfish in this country and abroad will spur those crawfish farming activities.

spring

PHOTOGRAPHY AND STORY
BY LYN JOHNSON

Fresh water fishing is tops at Spring Bayou Wildlife Management Area at this time of the year. Bass are hitting surface lures. Crappie and bream fishing is at its springtime best. Stringers are heavy and anglers contented.

Purchased in 1966, the 11,237-acre tract in Avoyelles Parish provides Central Louisiana fishermen with a network of meandering waterways ideally suited to fish production.

Providing squirrel, rabbit, deer and waterfowl hunting in season, the management area is best known for its scenic beauty and high quality fresh water fishing.

Acquisition of the tract marked a forward step in outright purchase of lands permanently dedicated to recreational hunting and fishing, as well as regulated commercial fishing.

Since acquisition of the public hunting and fishing area, the Commission has constructed a permanent headquarters site with two dwellings, an office building and storage facilities on Boggy Bayou. In addition to a public launching ramp on Old River, there are three camping and boat launching areas on Grand Lake, Boggy Bayou and near Petite Bayou and Old River.

Sportsmen have access to the area by boat or by driving three miles southeast from Highway 115 at Marksville.

bayou

Surrounded by majestic cypress trees draped with Spanish moss, one of the commission's headquarters buildings keeps a quiet watch over Spring Bayou's cool waters. Moving with the slow speed of a lazy spring day, the bayou meanders to a small dam, creating a tiny, gurgling waterfall ☐ Thickets of underbrush and gnarled stumps offer a hiding place for fish along the water's edge. A towering cypress stands on the shore as a silent sentinel of the bayou network ☐

PHOTO BY BOB DENNIE

Photograph shows commercial crab fisherman heading out into lake with his crab pots and bait.

# of princely pincers.

Floats attached to pots allow fisherman to retrieve them and harvest the yield of blue crabs.

BY McFADDEN DUFFY

Louisiana has a pincer grip on a large share of the country's commercial crabmeat market. Production of crabmeat in the Pelican State reflected a healthy gain in 1969 over 1968, but the best is yet to come because the million dollar shellfish industry has only tapped the vast supply of available blue crabs in estuarine and coastal waters.

Sportsmen and their families consume vast quantities of boiled crabs. The conventional, but most unconventional, shirt-sleeve crab boil is as familiar to Louisianians as the pecan praline. Millions of blue crabs taken annually by recreational methods represent only a small percentage of the number of crabs taken commercially.

Combined commercial and recreational take of crabs is only a relatively small part of the available supply of the green-blue crustacae. The total annual yield could be doubled with little damage to the resource. That is because of the tremendous reproductive potential of shallow gulf waters, tidal bays, lakes and estuaries.

Figures for 1968 show that Louisiana commercial crab fishermen caught about 6,828,000 pounds of blue crabs (live weight). This brought the crab fishermen roughly $715,000.

Available figures for 1969 reveal that production jumped to 11,500,000 pounds in the round (live weight) and netted crab fishermen $1,100,000. At $1.60 a pound for crabmeat, it is ap-

Crab pots are emptied into boat and crabs transferred to bushel baskets.

parent that the greenish cast to the shallow water blue crab somewhat resembled the brighter side of currency.

For those whose interest may be deeper than the dollar value of the blue crab industry or the sheer enjoyment of settling down to a table heaped with lobster-red boiled crabs, it should be noted there are many kinds of crabs inhabiting Louisiana waters. Only three species are eaten by humans, and only the blue crab enters into the commercial fisheries realm.

The stone crab shows up from time to time in state waters. Its meaty big claw is strong enough to crush an oyster, but the flesh is delicately flavored and usually it is quickly boiled and eaten by the oyster fisherman or person lucky enough to catch one.

Deep sea shrimp trawlers occasionally turn up a queen crab. It is also a delicacy and seldom reaches anyone other than the person who catches it.

In Louisiana today, production of crabmeat ranks fifth in natural or wild fisheries resources, led by shrimp, menhaden, oysters and fresh water catfish.

Perhaps one reason for the marked increase in crabmeat production for commercial markets is the relatively new method of catching them. It has replaced the traditional trotlines with bait and baited drop nets.

Professionals depend principally on the crab pot for taking blue crabs. This is a basket-type pot of mesh wire, somewhat resembling the well known lobster pot of the Eastern seaboard, but more cheaply fashioned.

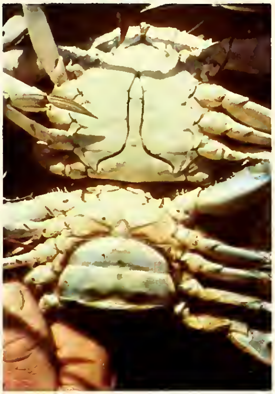
Some sportsmen use the crab pot to take crabs for home consumption but most continue their sport with the traditional mesh nets, baited and marked with floats or tied to pilings, piers, or bushes growing alongside the banks of bayous or canals.

The crab pots vary in design but are based on the same principle. An inner compartment holds the bait and there are openings through which crabs find their way in attempting to reach the bait. The openings are designed in such a way that few crabs are able to find their way out after entering the pot.

Soft shell crabs are highly in demand. This type of commercial fishing usually calls for brush traps. These are clumps of branches suspended at intervals from a trot line. The brush trap takes advantage of the need for a shedding crab to hide while its new shell is in the process of hardening.

Other commercial fishermen dealing in soft shell crabs engage in "making soft shells." This calls for slat holding pens in which hard shell crabs are placed and watched. When crabs in the holding pens show signs of shedding, they are transferred to other pens and watched more carefully.

As soon as they shed their hard outer shells, a process necessary for growth, soft shells are placed



Close-up shows basic difference between male and female crabs. At top is male blue crab.

in refrigeration and hustled to market. Refrigeration, or freezing, retards the natural hardening process. Soft shells are generally served deep fried or broiled.

Soft shells account for only two per cent of the total Louisiana annual production, by weight; but they represent about 20 per cent of the dollar value of state production. Price per pound for Louisiana softshells is about double the national average, the flavor being deemed more delicate by restaurant owners and chefs.

The blue crab's proper name is callinectes sapidus Rathbun. This member of the crustacea class belongs to the phylum arthropoda with its jointed legs, the order decapoda with its 10 legs, and the family portunidae since the last pair of legs are modified to form swimming paddles.

Regulations on crab producduction include size limits for commercial sales, prohibition of taking crabs in the "berry" stage when carrying eggs, and prohibition of trawling exclusively for crabs.

Blue crabs are abundant on the East Coast as well as around the Florida peninsula and along the entire northern Gulf of Mexico. The reproduction capacity of blue crabs is so great there is no present need to regulate the total legal catch in the foreseeable future, but protection of the valuable estuarine areas is of prime importance to annual reproduction.

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SPRING

IN A SOUTHERN FOREST

1. *Campsis radicans*—Trumpetcreeper
2. *Wisteria sinensis*—Chinese wisteria
3. *Argemone albiflora*—Prickle poppy
4. *Erythrina crista-galli*—Cockspur coral bean
5. *Thelosperma flavodiscum*—Greenthread
6. *Cassia fasciculata*—Partridge pea
7. *Clitoria mariana*—Spoon flower

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PHOTOGRAPHY BY S. W. OEFINGER, JR.

You Have To Talk Turkey

by McFadden Duffy

Each spring for the past two years Louisiana hunters have bagged between 250 and 300 wild turkeys. That annual bag does not reflect the thousands of hunter efforts that go into the spring wild turkey hunting season. The several hundred hunters who are successful have been either plain lucky, or are among the state's most skillful hunters.

There's a good reason why a successful turkey hunter commands more respect and envy among his fellow sportsmen than any other type of hunter in Louisiana. Tom turkeys are not easily called to the gun. To get a gobbler, you have to talk turkey.

Before getting around to the finer points of turkey hunting, a brief glimpse of the history of the wild turkey in Louisiana is in order. It has been estimated that the original turkey population in the state quivered around the one million mark. By the mid-1940's the population of America's largest game bird had dwindled down to a mere 1,500 birds.

During the years since the 1940's, Louisiana's statewide turkey population has increased by several thousand birds. Several million acres of forest lands now provide suitable habitat for turkey restocking. The potential for wild turkeys in great areas exists, presenting a challenge to management.

In the past, management of the wild turkey in Louisiana has revolved around restrictions on the hunting season and daily bag limits, closed seasons and experimental restocking. Hunting seasons have been, and presently are, limited to spring gobbler hunting.

Of all the measures aimed at increasing present supplies of wild turkeys in Louisiana during the past two decades and more, the present program of turkey restocking is the only one showing definite signs of being successful.

Under the program, wild trapped birds are used. The Commission initiated its program of live-trapping and restocking in 1963. In a nutshell this was a transplanting program, involving expansion of wild turkey populations in order to provide additional outdoor recreation for more hunters, as well as to reduce hunting pressure on those small portions of the state where spring hunting is now allowed.

Since 1963, the Commission has been able to secure a limited number of wild turkeys from the states of Alabama, Florida and Mississippi. These birds have augmented those obtained from live-trapping operations in southeastern and northeastern Louisiana.

Approximately 525 birds have been transplanted in 29 locations throughout the state. It is hoped that as the program continues much of the potential wild turkey range over the state will be restocked within a few years. With protection, it is believed that reproduction will

eventually produce huntable flocks in all areas where suitable habitat exists but wild turkeys are not present in numbers that today afford hunting opportunity.

If the wild turkey program proves as successful as the deer stocking program, it is felt that the annual bag could be several thousand turkeys each year, as compared to the few hundred which are presently being harvested each year.

It can be said safely that there are more frustrated wild turkey hunters than successful ones. Increasing the number of wild turkeys in Louisiana will certainly enhance a hunter's chances of bagging a Tom turkey, but luck will play a great part unless the hunter masters the fundamentals of calling a gobbler to the gun.

Turkey hunting calls for more skill and patience than any other type of hunting. It follows that the hunter who has a turkey beard dangling from his gun rack or tacked to the door frame inside his kitchen is going to attract both envy and admiration from visitors.

There are hunters who spend years trying for a gobbler without bagging one. Some have called birds almost into range and then had their turkeys spook, leaving them with that sinking inner feeling that they'd almost made a kill but hadn't.

Getting down to essentials, here are a few things novice turkey hunters should remember.

The first and most important thing for a turkey hunter to remember is that in order to shoot a wild Tom turkey he has to call it to him. Turkeys can't be stalked. They are never walked up, and they are only rarely sighted in the open.

There are several types of turkey calls. They range from the wing bone to the cedar box. A few real champions can call them by mouth. The type of call isn't as important as the manner in which it is used.

Spring turkey hunting means that the hunter calls like a hen on the loose, anxious to join up with a gobbler and his harem. The yelp must be crystal clear—as true as the note of a Stradivarius, as pleading as the last note of a distant bugle. One false note or too much calling and the hunter might as well shift to another likely spot and start all over again.

Best bet in likely turkey country

is to build a quick blind or select a spot where visibility is assured. Try to find concealment devoid of twigs and leaves that may create alien sounds when the hunter shifts position. Many a turkey hunter finds that the gobbler he called up approached from an unexpected direction. Select the blind so that good shooting vision is assured in all directions.

Many hunters make the mistake of calling too much. A couple of yelps should bring response from a gobbler if there is one about. Wild turkeys have keen hearing. The high-pitched yelp of a hen turkey can be heard for considerable distance in the woods.

If the gobbler responds, best bet is a single hen yelp and then patience. An interested gobbler will put on a show if he has reason to believe that all is well in the spring woods. He'll strut, scratch the ground and spread his feathers as he seeks another hen to add to his harem.

There are times when a gobbler will approach stealthily if he has reason to believe that the call contained a flaw. Many a hunter has glanced over his shoulder only to see the wild turkey melt into protective cover and disappear.

Present regulations provide that only shotguns can be used in taking wild turkeys. Hunters generally shoot for the head and a full choke gun is preferred. Baiting and use of dogs is illegal. Hunters may argue the merits of shot size. One or two pellets in the head will take a turkey. A dense, tight pattern is good. Those who prefer heavier loads often will try for a body shot. This often results in a lost cripple.

The pros and cons of how to bag a wild turkey can be discussed at great lengths. Every turkey hunter has his theories and makes his plans accordingly. Weather conditions in the spring play a great part in hunter success.

When the wild turkey hunting season is over, the person who has bagged one stands a little taller than other hunters because he has taken one of the most wary, elusive and difficult to hunt game birds—the largest game bird in America. It stands to reason that he is the envy of all hunters in the state.

our vanishing delta hardwoods

by Richard K. Yancey, Assistant Director
Louisiana Wild Life and Fisheries
Commission

The bottomland hardwood region in the lower Mississippi Valley is one of the most productive game and fish habitats to be found on the continent. Its forests teem with deer, squirrel, rabbit, wild turkey, waterfowl and raccoons, all of which are extremely important to hundreds of thousands of sportsmen who reside in the delta.

Additionally, its lakes and meandering streams are highly productive of game and commercial fishes. Because of its productiveness the region annually provides millions of days of outdoor recreation in the form of fishing and hunting for the southern sportsmen. For those who prefer to merely observe wildlife or take photographs the hardwoods usually swarm with a wide variety of colorful and noisy bird life.

The tremendous capability of this type of habitat to produce bumper crops of forest game is related directly to the timber types that comprise the overstory and the abundant browse species that make up the understory. Soil fertility and abundant rainfall also play an important role in the quality of the habitat. Virtually all of the major stands of hardwoods are made up of a wide variety of mast producing species as oaks and hickories that provide high quality food supplies for forest game on a year round basis. Within the home range of a deer, squirrel or turkey, 15 or more species of hardwoods are usually to be found.

When a hardwood timber stand is opened up through logging, sunlight reaches the forest floor and results in the production of abundant and high quality browse plants for deer and rabbits. An ideal hardwood game range is one that is comprised of a maximum variety of species of all age classes.

The tupelo cypress brakes and sloughs that intermingle with the hardwood forest are normally covered by water the year round and are highly productive of wood ducks and heavily used by migratory waterfowl during the winter months. Fur bearers such as mink, otter, and raccoon also thrive in this type of habitat.

Under natural conditions the streams and bayous that interlace the timberlands always support excellent populations of game fishes such as black bass, bream and crappie, and commercial fishes such as buffalo and catfish. This is because such streams traditionally overflow their banks during high water periods in the spring and summer thereby creating ideal environmental conditions for fish production. Population surveys in Louisiana in backwater areas have revealed the presence of as many as 972 pounds of fish per acre while standing crops of 400-600 pounds per acre are normal. Such waters provide excellent sport and commercial fishing and millions of days of recreation each year. When cutoff from backwater overflow fish populations rapidly decline, and when the meandering bayous are converted into canals, where only shallow silt laden waters are to be found, the usable fish population practically disappears.

The fate of the fish and wildlife resources in the bottomland hardwood region depends upon future land use practices. The forest game birds and animals must have food and cover to survive. Obviously, if all of the hardwood timber is removed from the land in the lower delta we are going to lose our forest game populations. Since agriculture in the delta lands is also highly dependent on ade-

quate drainage most of the natural streams and small rivers will be channelized and converted to canals. At that point the value of such areas for sport and commercial fishing will have virtually disappeared.

Based upon all the information available at this time the outlook for maintaining major stands of hardwoods in the delta region in the years ahead is extremely dismal. Gigantic land clearing operations in recent years have converted many hundreds of thousands of acres of hardwood forests to fields that are now being utilized for the production of agricultural crops and livestock. As the acreage in hardwood forests has declined the carrying capacity for wildlife has also diminished proportionately.

In analyzing the available data regarding the clearing of hardwoods in the lower Mississippi Valley we find the trend in North Louisiana to be virtually identical with that which has taken place in western Mississippi and eastern Arkansas. As such we use North Louisiana, beginning at Avoyelles and Rapides Parishes, as an example of the trends that have developed in recent years in the lower Mississippi Valley.

In North Louisiana the bottomland hardwood region is comprised of approximately 5,627,494 acres. By 1961 the total acreage remaining in hardwood had diminished to 3,300,158. By 1969 land clearing operations further reduced the acreage in bottomlands to 2,521,511 acres. This means that bottomland hardwoods were being removed at a rate of 111,235 acres per year between 1962 and 1968. Since the land clearing rate shows no sign of letting up it is estimated that the bottomland hardwoods in North Louisiana will for all practical purposes have been eliminated by 1991.

Obviously this is going to have a disastrous effect on forest game populations and the sport of hunting. Without adequate food, water, and cover conditions wildlife cannot survive. Since it is expected that most of the natural streams that flow through the hardwoods will also be destroyed by drainage projects sport and commercial fishing can be expected to diminish proportionately.

The average carrying capacity of North Louisiana bottomland hardwoods under usual selective logging practices is considered to be about 1 deer per 20 acres. This would mean that if all bottomlands in the northern part of the state were still in hardwoods a deer herd numbering about 280,000 animals could be comfortably supported. By 1961 this carrying capacity had been reduced to

165,000 deer and by 1968 to 126,000. By 1985 we except the carrying capacity to be reduced by land clearing operations to approximately 31,000.

When a deer herd is at carrying capacity approximately 1/3 of the animals can be removed by hunting each fall without reducing next seasons population. This means that the deer harvest potential of 42,000 in 1968 will have dropped to 10,000 by 1985.

Approximately 24 individual hunting efforts are made for each deer harvested in the North Louisiana hardwoods. This means that the recreational potential for deer hunting will have declined from approximately 1 million in 1968 to 1/4 million man days recreation in 1985.

Monetarily speaking the potential deer hunter expenditures of nearly $10,000,000 in 1968 will have declined by 75% by 1985.

The bottomland hardwoods of North Louisiana have an average carrying capacity of 1.3 squirrels per acre. If all bottomlands were still in hardwoods in this region an average population of about 7,315,000 fox and gray squirrels would be available for hunting. By 1961 the remaining hardwoods were capable of supporting a squirrel population numbering only about 4-1/4 million animals and by 1968 this was reduced to 3-1/3 million animals. By 1985 we expect the remaining hardwoods to be capable of supporting a squirrel population of only about 800,000 fox and gray squirrels.

On the average approximately 1 squirrel per 2.6 acres of hardwood can be harvested therefore, the potential harvest will have been reduced from 2,150,000 animals to 240,000 by 1985.

Since each squirrel hunting effort results in an average bag of 1.8 squirrels, by 1985 the potential man days of recreation will have been reduced by 90% to only 135,000 days of squirrel hunter recreation in the remaining bottomland hardwoods of Northern Louisiana. This is an extremely important game species that annually affords a tremendous amount of hunter opportunity.

Declines in populations and hunter recreation values of swamp rabbits, wild turkey and waterfowl are similar to those outlined above for deer and squirrel. Specific figures are outlined in the accompanying tables.

Fish studies conducted in 1957 by Louisiana Wild Life and Fisheries Commission personnel indicated that the backwater overflow areas in the north delta produced an annual commercial fish harvest of approximately 2,800,000 pounds of fish valued in excess of $833,000. This same area supported an extensive sport fishery for bass, crappie, sunfish and white bass that annually harvested nearly 1,700,000 pounds of sport fish. With the extensive leveeing, land clearing, accompanying drainage and the advent of crop dusting these poundages have been drastically reduced in most areas. As more streams and lakes are converted into canals fish populations are going to decline further in the delta.

Reduction in carrying capacities for North Louisiana bottomlands resulting from clearing of hardwoods and associated drainage of wetlands

Principal forest and wetlands game species	Standard Logging	If all bottomland still in hardwood 5,627,494 acres	1961-63 3,300,158 acres remaining	1968 2,521,511 acres remaining	Decline based on 1961-1968 land clearing rates 111,235 acres per year	Total as of 1985 630,516 acres remaining
Deer	1 per 20 acres	281,375	165,008	126,076	5,562	31,526
Squirrel	1.3 per acre	7,315,742	4,290,205	3,277,964	144,605	819,670
Swamp Rabbit	1 per 2 acres	2,813,747	1,650,079	1,260,756	55,618	315,208
Turkey	1 per 75 acres	75,033	44,002	33,620	1,483	8,406
Wood Ducks	1 per 100 acres	56,274	33,000	25,215	1,112	6,305
Migrant Waterfowl	1 per 10 acres	562,749	330,015	252,000	11,123	63,051

*Declines are associated with drainage of wetlands such as cypress brakes and channelization of streams

North Louisiana Parishes
Acreage in bottomland hardwoods at various periods

PARISH	Total acreage in parish	*Total acreage in parish that originally produced bottomland hardwoods	Acreage remaining in bottomland hardwoods			Bottomland hardwoods average land clearing in acreage per year 1962-1968	Bottomland hardwoods acreage remaining in 1985 based on 1962-68 average annual clearing rate
			1961	1964	1968		
Avoyelles	528,600	500,474	303,300	290,700	241,480	8,831	91,353
Bossier	537,000	164,966	92,000	90,000	87,420	654	76,302
Caddo	568,300	209,203	74,800	72,800	68,497	900	53,197
Caldwell	552,000	144,691	114,800	109,800	97,800	2,427	56,541
Catahoula	467,200	362,632	280,200	262,200	138,200	20,284	0
Concordia	453,800	447,815	337,600	313,600	266,600	10,143	94,169
DeSoto	570,900	51,610	44,750	44,100	40,283	638	29,437
E. Carroll	275,800	274,562	124,200	109,200	90,000	4,886	6,938
Franklin	411,500	406,290	137,000	126,000	101,000	5,143	13,569
Grant	423,700	72,806	61,200	61,000	60,260	134	57,982
LaSalle	408,300	94,003	121,350	121,000	118,260	441	110,763
Madison	423,700	421,168	274,800	244,800	216,800	8,285	201,955
Morehouse	512,700	468,720	217,000	187,000	128,742	12,608	0
Natchitoches	827,500	324,403	168,500	148,500	123,800	6,385	15,255
Ouachita	408,300	199,066	138,400	138,400	124,010	2,055	89,075
Rapides	842,200	353,894	181,358	173,600	160,969	3,198	106,603
Red River	264,300	120,730	56,100	54,000	44,760	1,620	17,220
Richland	368,600	361,437	148,000	142,000	102,000	6,571	0
Tensas	398,700	393,592	256,100	230,100	195,100	8,714	46,962
W. Carroll	227,800	226,383	97,500	67,500	47,000	7,214	0
Winn	607,300	11,059	71,200	70,200	68,530	381	62,053
TOTAL	10,078,200	5,627,494	3,300,158	3,056,500	2,521,511	111,235	1,129,374

*Lytle, S. A. and M. B. Sturgis, 1962, General Soil Areas and Associated Soil Series Group of Louisiana, LSU Agriculture Experimental Station, Baton Rouge, Louisiana

Footnote: In 1960 the Louisiana Wild Life and Fisheries Commission began purchasing a few remnant stands of bottomland hardwoods in order that these could be preserved for future use by forest game populations and by the state's sportsmen. Since that time 103,155 acres have been purchased.